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SUBJECT: GOLD MINING POSES HEALTH, ENVIRONMENTAL RISKS IN GUYANA
SHIELD

REF: (A) 2004 PARAMARIBO 259,
(B) 2004 PARAMARIBO 377,
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11. SUMMARY Artisanal small-scale gold mining (ASGM) has seen exponential growth in the South American countries of the Guyana Shield (Guyana, Suriname, French Guyana, Venezuela, Brazil) since the early 1980's, owing to dramatic gold price increases and limited government presence in the remote interior regions. According to the United Nations Environment Programme (UNEP), ASGM has become the world's largest source of mercury emissions in the environment. Although artisanal mining may bring employment and income to impoverished areas, the environmental and health consequences of unregulated gold mining are severe, including: deforestation, mercury pollution, public health deterioration, and social conflict. Furthermore, illegal mining promotes a culture of lawlessness, contributing to regional instability via ancillary illicit activities. END SUMMARY.

GOLD MINING IN THE GUYANA SHIELD

12. The Guyana Shield currently ranks among the fastest-growing gold production regions in the world, following only Peru and Indonesia. Over two million square kilometers of geologic Precambrian rock extend west across the Shield from Venezuela into Guyana, Suriname, French Guyana, and south into Brazil, offering access to an exposed greenstone with rich deposits of gold, diamonds, iron, and bauxite. The prospect of getting rich quick has inspired small-scale gold miners to flock to this sparsely populated region with porous borders and rainforests that rank among the world's most biodiverse.

13. The Guyana Shield experienced a gold rush revival starting in the 1980's in response to rising gold prices that followed

abandonment of the Bretton-Woods fixed gold price of USD35 per ounce (oz). Gold prices rose to nearly USD400 per oz in the 1980s and 1990s, climbed to USD600 in 2006, and reached as high as USD1000 per oz in 2008 and 2009. Correspondingly, the region witnessed exponential growth in small-scale gold mining focused on the 'mass exploitation of lower-grade gold deposits', according to David S. Hammond, an international forestry consultant.

¶4. Although some larger mining companies have entered the gold market, the region remains dominated by small-scale mining, which has proven a compelling alternative to widespread unemployment. However, much of the gold extracted from the interior of these Guyana Shield countries remains a part of the informal sector, contributing little to government tax bases (REFTEL A).

¶5. Artisanal mining has created a 'Wild West' sub-culture in the Guyana Shield interior, bringing alcoholism, prostitution, disease, crime and other illicit activities, according to Marcello Veiga, a regional specialist on ASGM. Serious health, safety and security issues radiate beyond the immediate mining environment, eroding the broader financial benefits achieved by gold extraction.

¶6. Accurate information on official and illicit mercury trading is not available; however, the UNEP Global Mercury Project estimates metric tons of annual average mercury consumption (i.e., environmental loss) in the Guyana Shield to be: Brazil-45, French Guyana-7.5, Guyana-15, Suriname-7.5, Venezuela-15. Other sources quote figures 4 to 5 times higher. Information gleaned from Surinamese sources in 2004 reported mercury quantities in the range of 20 to 40 tons per year (REFTEL A). French Guyana, Suriname and Venezuela (countries with active ASGM activity) report to UNEP no official trade in mercury, making estimates of mercury use extremely difficult.

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ENVIRONMENTAL IMPACT ON GUYANA SHIELD

¶7. Mining of low-grade gold deposits involves forest clearing and hydraulic blasting of river banks with high-powered water cannons to expose potential gold-containing gravels. In most cases, gold ores are then concentrated by settling before amalgamation with mercury, and final conversion to gold product via mercury heat vaporization. Mining specialists estimate that 1 to 3 grams of mercury are lost to the environment for each gram of gold recovered (USGS).

¶8. The Brazilian Oswaldo Cruz Institute blames small-scale mining for deforestation, mercury contamination of rivers, transmission of malaria, HIV and other diseases, cultural erosion and social conflict. Blacksmith Institute and the Green Cross indicate ASGM as one of the world's Top Ten Worst Pollution Problems, <http://www.worstpollution.org>. In 2005, Venezuela's Minister of Environment commented that it will take over 70 years to decontaminate areas polluted by mercury and 300 years to re-plant destroyed forests, suggesting long-term impacts on climate as well as local ecosystems.

¶9. Although ASGM may create employment and income for marginalized populations in impoverished areas, the lack of regulatory enforcement threatens the long-term productivity of the region due to environmental degradation, riverine mercury contamination and consequent health impacts. Hardest hit by transient mining activities, are the Amerindian (indigenous) and Maroon forest communities that benefit nominally from the financial gains of mining but bear the weight of environmental and social costs.

¶10. Guyana and Suriname are especially vulnerable to the detrimental environmental and health impacts of ASGM, having few law enforcement resources to regulate small-scale miners effectively or protect affected populations. COMMENT: In an industry known for 'liquidation' of resources rather than sustainable use, ASGM in the Guyana Shield is likely to continue until deposits are exhausted.
END COMMENT.

¶11. Mercury's well-documented bioaccumulation (concentration in animal tissues) up the food chain poses a significant health risk to Guyana Shield residents that rely on freshwater fish as their primary protein source. Predatory fish, at the top of the riverine food chain, are routinely found with mercury concentrations that exceed the recommended WHO mercury limits of 0.5 micrograms per gram of fish, according to Jan Mol (2001) and other Surinamese researchers. Elevated mercury levels in Atlantic fish have also been detected in Mol's research, raising questions about the impacts of ASGM on marine fisheries.

¶12. Decades of research have documented that mercury accumulation in humans causes neurological damage, birth defects and sensory impairment (UNEP). In the Guyana Shield, researchers have only recently begun testing of mercury content in the hair, blood and urine of infants and mothers in affected communities (REFTEL B,C). Doctors are also gathering evidence of the rising incidence of birth defects, mental retardation and mental impairment. Most directly affected are downstream Amerindian and Maroon forest communities; however, Guyana Shield tributaries also drain to coastal cities, threatening to leave a legacy of mercury poisoning, decreased mental abilities, birth defects and decreased human potential across the region.

¶13. As to other health concerns, poorly managed mining camps often

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results in the presence of stagnant wastewater pools ideal for mosquito breeding. Mining camps become hotspots of mosquito-borne diseases such as malaria and dengue, and the migrant labor force facilitates disease transmission from one community to the next. Prostitution and HIV are also consequences of a transient labor force with short-term profit motives.

BRAZILIAN GARIMPEIROS

¶14. Migrant mine workers, many from Brazil, clandestinely cross porous country borders of the Guyana Shield countries, often introducing new mining methods, equipment and cash. Just as often however, ASGM operators contribute to the contamination of local areas without consideration of long-term effects of mercury pollution on local populations. Some Guyana Shield governmental officials attribute lawlessness in mining camps to the transient labor force. Recent WWF reports indicate active (legal and illegal) garimpero (Brazilian miner) populations of 30,000 in Guyana, 30,000 to 60,000 in Suriname, and 10,000 in French Guyana.

¶15. Migration of Brazilians has been driven by crackdowns on illegal gold mining and enforcement of tribal land integrity in the Brazilian Amazon, the lack of border controls, and the relative lack of mining regulatory enforcement in the interior regions of the Guyana Shield.

¶16. COMMENT: In light of growing international agreement on the need for mercury emission controls, countries of the Guyana Shield are likely to encounter increasing global pressure to gain control over the historically unregulated ASGM sector. Already, Brazil and French Guyana have signed an agreement intended to help them work together to reduce the rampant illegal gold mining that devastates forests and poisons populations in their border region. Government officials in Guyana Shield countries claim, however, that national resources are not available to enforce regulations related to ASGM and mercury emissions (press reports, REFTEL A). Even today, the environmental damage and public health risks associated with ASGM mercury use have not been considered sufficiently high priority to warrant action. Furthermore, news reports indicate that Guyana Shield government and industry leaders believe international efforts (e.g., UNEP, EU) to limit mercury trade are unlikely to affect their local mining industries in the short term. Until these governments prioritize the protection of public health and environmental resources, there is little chance that progress will be made towards reducing poverty, improving employment conditions, improving national security in interior and border regions, and raising the

overall national income for future generations. END COMMENT.

¶17. This cable was drafted in coordination with U.S. Embassies in Brasilia, Georgetown and Paramaribo.

KUBISKE